Corporate Governance and the Returns to Acquiring Firms' Shareholders: An International Comparison*

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Abstract

We examine the effects of mergers on the returns to acquiring companies' shareholders for a large sample of companies from both Anglo-Saxon and non-Anglo-Saxon countries over the 1980s and 1990s. With the important exception of Japan, we find similar patterns of returns across both types of countries. For a sample of 9,733 acquiring companies the mean percentage gain over a short window of 21 days is 0.6 percent. This picture changes dramatically as the market has more time to evaluate the mergers and/or the acquiring firms. After three years, acquirers' shareholders in the United States and continental Europe lost on average 19 percent of their market value compared to a portfolio of non-merging firms in their size deciles and their two-digit industry, in Canada, Australia and New Zealand roughly 16 percent, and in the four Scandinavian countries almost 15 percent. Further analysis indicates that some mergers are consistent with the hypothesis that mergers generate synergies, but that a majority of mergers in Continental Europe are explained by the managerial discretion and/or hubris hypothesis. Our findings also suggest that that corporate governance institutions in the United States and the other Anglo-Saxon countries lead to better investment performance than in continental Europe, when one confines one's attention to mergers.

JEL Codes: G34, L21

Keywords: Corporate Governance, Mergers, Acquisitions, Determinants of Mergers, Effects of Mergers, International Comparison

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* The research in this article was supported in part by the Austrian National Bank's Jubiläumsfond, Project 11782.

There has been considerable interest in recent years in differences in corporate governance systems across countries and their effects on both corporate performance and the performance of national economies. Corporate governance systems that better align shareholders' and managers' interests have been found to lead to higher dividend payouts and higher returns on investment.[1] Strong shareholder protection leads to larger external capital markets, which in turn have been found to be associated with higher rates of economic growth.[2] Thus, it appears that shareholders and the rest of society may both benefit from strong corporate governance institutions.

There are many ways in which shareholders' and managers' interests might diverge with the managers' compensation being perhaps the most obvious issue. Growth is another important area of conflict, however. Managers may wish to see their firms grow faster than the rate, which would maximize shareholder wealth, to obtain the pecuniary advantages of growth – higher incomes, because managers' salaries are positively correlated with the size of their companies – and perhaps even more importantly to obtain the psychological rewards of power and prestige from managing a large company.[3]

Previous research shows that companies in countries with civil law systems have returns on investment significantly below their costs of capital, while companies in countries with common law systems have returns on investment roughly equal to their costs of capital (Gugler, Mueller and Yurtoglu, 2003, 2004). These findings are consistent with the claim of La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997) that Anglo-Saxon legal systems better align manager and shareholder interests than civil law systems, and further that managers in civil law system countries harm their shareholders in part by over investing. Mergers are the fastest way to grow, and thus are particularly likely to be attractive for growth-maximizing managers with limited time horizons in their companies. Gugler, Mueller and Yurtoglu (2003, 2004) use a broad definition of investment, which includes mergers as well as capital equipment purchases, R&D and advertising. Because of the special attraction mergers should hold for growth-orientated managers, we test in this paper to see whether the same differences in investment performance between Anglo-Saxon and civil-law countries are observed when one concentrates just on mergers. Most of the mergers for which we can get data have occurred in the developed countries of the world, and thus we restrict our attention to these.

The stylized facts about mergers, drawn largely from studies of mergers in Anglo-Saxon countries, are that they benefit shareholders of the acquired companies, because of the premia paid for their shares; they do not benefit the acquiring companies' shareholders, if one measures gains over short time intervals (windows) around the merger announcements; and that over long windows following the mergers the returns to acquirers' shareholders are often significantly negative.[4] These findings are consistent with their being agency problems even in Anglo-Saxon countries, and that managers of the acquiring firms are not maximizing their shareholders' wealth.

Recently, Shleifer and Vishny (2003) have developed a theory about the causes of mergers that provides an alternative explanation for why acquirers' shareholders appear to lose from the mergers. They assume that the shares of some companies become *overvalued* at some points in time, and that acquirers' managers maximize their shareholders' wealth by trading their overvalued shares for the real assets of target companies. The post-merger declines in acquirers' share prices are assumed to be a market correction of the initial overvaluation, and not to be caused by the mergers.[5] To judge whether mergers on average increase wealth or destroy it, it is necessary to determine whether the post-merger losses experienced by acquirers' shareholders are caused by the mergers or by the acquirers' overvaluation at the time of the acquisitions. One of the contributions of this article is to disentangle these two possible causes of losses to acquirers.

Mergers that are due to agency problems or overvaluation do not create wealth and are likely to destroy it, if there are transactions costs in combining the merging companies. On the other hand, some mergers undoubtedly do increase shareholder wealth by increasing the efficiency or market power of the merging companies. Indeed, even a growth-maximizing manager would not pass up an opportunity to undertake a profitable merger, since she could always use these profits to pursue still more growth. Thus, we expect that some mergers in all countries are profitable, while others do not. We expect the shareholders of both the acquiring and acquired companies to gain from profitable mergers. One of the contributions of this article is to employ a methodology, which allows us to test several of the leading hypotheses about the causes of mergers and to determine the fractions of mergers in each country sample that are wealth creating.

Briefly summarized, our findings are as follows. (1) Some mergers fit the traditional hypotheses that mergers increase efficiency or market power, while others fit the behavioral hypotheses that assume agency problems or overvaluation. (2) The fractions of mergers that fit the behavioral hypotheses increases as one extends the window for measuring the gains to acquirers, and thus it is important for obtaining a true picture of the causes and effects of mergers that one measure acquirers' gains over long, post-merger windows. (3) It is also important to adjust for any overvaluation of acquirers at the time of the mergers to determine whether they are wealth-creating. (4) After adjustments for overvaluation, mergers in Anglo-Saxon countries turn out to be wealth-creating, while mergers in continental European countries are wealth-destroying.

The plan of the paper is as follows. Section I presents the main hypotheses concerning the effects of mergers on the returns to acquirers' shareholders and our methodology for testing them. Our data are described in Section II with our results for the first set of tests presented in Section III. In Section IV, we describe a methodology for testing hypotheses about the causes of mergers that uses data on the gains to both acquirers and targets in mergers. Since we have much less data on targets, the second sets of tests rely on smaller samples. The results of these tests are discussed in Section V. In Section VI we draw our conclusions.

I. Theory

We divide the hypotheses about the causes of mergers into two broad categories – neoclassical and behavioral theories. The neoclassical theories assume that (1) managers maximize their shareholders' wealth, (2) consequently mergers increase shareholder wealth, and (3) the capital market is efficient. The latter assumption implies that the effects of mergers on shareholder wealth can be measured over short windows around merger announcements. The capital market evaluates the likely effects of the mergers on future profits when they are announced, and all wealth changes are thus unbiasedly reflected in the share price changes accompanying the announcements. The returns to acquirers over longer windows should be normal. (Since the targets disappear, one cannot measure returns to them over long windows.)

We divide the neoclassical hypotheses into two categories. In the first, fall all mergers that generate some synergy specific to the two merging firms, as say an increase in market power. Since the participation of both firms is necessary to achieve this synergy, it is reasonable to assume that both sets of shareholders gain from the merger. This leads to

Neoclassical Hypothesis: SH. For mergers that generate synergies, both the acquiring and acquired firms experience positive gains at the time of the merger announcements, and normal returns for longer windows afterward.

The other neoclassical hypothesis that we test is the market for corporate control hypothesis (hereafter MCCH). Under this hypothesis, mergers are seen as ways to replace managers who are not maximizing the value of their firms either due to incompetence or agency problems. All of the gains thus arise from replacing the target's management. One would still expect some of the gains from the merger to go to the acquirers – if this were not the case, why would wealth-maximizing managers undertake the mergers? Several authors have used the MCCH to explain why acquirers' shareholders *do not gain* from the mergers, however.[6] They envisage a kind of bidding war for the target, which continues until all of the gains from the target are reflected in the premium paid for it. This reasoning leads to

Neoclassical Hypothesis: MCCH. Mergers to replace bad managers generate non-negative gains to the acquiring firms and positive gains to acquired firms at the time of the merger announcements, and normal returns for longer windows afterward.

The behavioral hypotheses relax one or more of the assumptions underlying the neoclassical hypotheses. The managerial discretion hypothesis (hereafter MDH) – relaxes all three. Managers are assumed to be growth maximizers, and to undertake investments like mergers that expand their firm while destroying shareholder wealth. The latter may come about as a result of the transaction costs of integrating the two companies' operations, and because an acquirer must pay a target's shareholders a premium over its pre-bid share price to induce them to relinquish their shares. The constraint on managers who pursue growth is the threat of having their company taken over and being dismissed should their share prices fall too low. Thus, growth-maximizing managers prefer to undertake wealth destroying acquisitions when the market is optimistic about the firm's own fortunes, as say following a run-up in its share price, or during periods of general optimism in the stock market, as during a stock market boom, when shareholders are more willing to believe the promises of synergies and future wealth gains that typically accompany merger announcements.[7] Eventually, of course, the market recognizes that the mergers have not generated wealth, that the promises of synergies and other economies were false or exaggerated, and thus the acquiring firms' share prices fall. This leads to:

Behavioral Hypothesis: MDH. Acquiring companies' shareholders experience large negative abnormal returns over long time windows after the mergers, but not when the mergers are announced.

The overvaluation hypothesis of Shleifer and Vishny (2003) retains the neoclassical theory assumption that acquirers' managers maximize their shareholders' wealth, but abandons the assumptions that mergers generate wealth and of capital market efficiency. When a company's shares become overvalued, that is the market value of the firm exceeds the present discounted value of its earnings stream, its managers undertake an acquisition in which they exchange their overvalued shares for the presumably correctly valued shares of another firm. Thus, their shareholders actually benefit from the merger, because they acquire correctly-valued real assets in exchange for overvalued paper. The target's managers are assumed to be willing to accept these overvalued shares, because they wish to "cash in" their stakes in their company. After the merger, when the market corrects its error about the acquirer's overvaluation, its share price falls, but the fall is not assumed to be caused by the merger and is less than would have occurred in its absence. Thus, the overvaluation hypothesis (OH) makes the same predictions as the MDH, but for different reasons.

Behavioral Hypothesis: OH. Acquiring companies' shareholders experience large negative abnormal returns over long windows after mergers, but not when the mergers are announced.

The third behavioral hypothesis that we examine is the *hubris hypothesis* of Richard Roll (1986, hereafter HH). Where the MDH and OH assume that the *capital market* can become overly optimistic about a firm's future profits, the HH assumes that it is the *managers* of the acquiring firm that are overly optimistic about their ability to generate wealth from a merger. They thus overbid for the target. Roll put forward the HH to explain why the shareholders of acquiring companies do not gain from mergers. We thus have

Behavioral Hypothesis: HH. Acquiring companies' shareholders do not experience positive abnormal returns at the time when the mergers are announced.

II. Data and Methodology

Our principal source of data is *Global Mergers and Acquisitions* database from *Thompson Financial Securities Data***.** The database covers worldwide all transactions valued at \$1 million or more. We define a merger as a transaction where more than 50 percent of the target's equity is acquired. In some years an acquirer buys more than one target. In such cases we concentrate on the largest acquisition based on the value of the deals. We also do not look at deals that were announced but later not completed. We use this dataset to collect information on the identities of the merging firms, the exact announcement date, and the value of the deal. While our sample period covers the 1981-2002 period most of the mergers that we study here have taken place in 1990s. In contrast to the US sample where we have 1009 mergers that have taken place over the 1980s, we have data only on 348 mergers in the rest of the world that took place in 1980s. Data on the market value of the acquiring and target companies and any additional balance sheet and income statement variables are retrieved from the *Compustat* and *Compustat Global* databases of Standard and Poors'.

Summary statistics by the country of acquiring companies in our sample are presented in Table 1. The first column indicates the number of acquiring companies in each of the country samples. Almost 42% of the 9,733 acquisitions in our sample are undertaken by US companies. The second highest mergers and acquisitions activity is observed in Great Britain with over 2000 transactions. We analyze 1803 acquisitions by continental European companies and 470 by Scandinavian companies. The sample includes 500 Japanese acquirers, 328 acquisitions by Canadian companies, and 325 by Australian companies.

The next three columns report summary statistics on the size of acquiring companies. The mean size of acquirers as measured by their market value of equity is \$7.2 billion, the median being almost \$1.2 billion. The US acquirers are larger with a mean of \$9.4 billion. Targets are substantially smaller than acquirers averaging about 15 percent of acquiring companies' size.[8] The next three columns report the deal values of the acquisitions. Since this number reflects the value actually paid for the target, its relationship to the market value of the targets gives an idea of the premium paid by the acquiring companies. Premiums in the Anglo Saxon countries fall in the range of 20%-30%, but are substantially smaller in the continental European countries.

Our measure for abnormal return (*AR*) for an acquiring company (*A*) over a *t*+*n* day window is

$$AR^{A}_{t+n} = R^{A}_{t+n} - R^{NA}_{t+n} \tag{1}$$

where R^{A}_{t+n} is the return of *A* over the *n* days window (*n*=20 for our short term window, *n*=250, 500, and 750 for the long windows) and R^{NA}_{t+n} is the return on a portfolio of non-acquiring firms in the same size-decile and in the same two-digit industry of the acquiring companies' country.[9] By controlling for company size, industry and country of origin, we hope to control for risk differences across companies that might explain return differences. It is also common to control for initial differences in market-to-book-value ratios. We do not do this, because these will be related to the extent to which a firm is overvalued, and we test directly for the effect of overvaluation on company returns. We start to compute the abnormal returns 10 days before a merger announcement.[10] Both returns are calculated using the changes in the total return index from *Datastream*, which is a continuously compounded return index adjusted for dividend payments and share splits.

III. Estimates of Returns

Table 2 presents the estimates of abnormal returns by country for four time windows –

from ten trading days before the announcement to ten trading days afterward, from ten trading days before the announcement to 250 trading days afterward (roughly one year), and for post-announcement windows of 500 and 750 trading days after announcements, corresponding roughly to two and three year windows. Since there are only a small number of observations for some countries, we also report aggregated results for the UK and Ireland, Australia and New Zealand, the Scandinavian countries and continental Europe. The first column for each window, labeled N, gives the number of mergers for that country and that window. The column labeled M%, presents the mean abnormal returns to the acquirers' shareholders as a percent of the market value of its equity. The M column presents the mean absolute abnormal returns to the acquirers.

Starting with the shortest window (d = -10 to d = +10), we see that abnormal returns to acquirers as a percent of their size are generally small (at most one or two percent) and positive. Eighteen of the 22 country means in the M% column are positive, 14 in the M column. The mean percentage gain for acquirers over the whole sample is, however, *less* than one percent. There appear to be positive gains to the mergers, when one factors in the gains to the targets, but the acquirers gain little from them. Among the neoclassical theories, this is more consistent with the MCCH than the synergy hypothesis. If there are synergies from the mergers, they benefit mostly the targets' shareholders. This result is expected, if the gains come from replacing the targets' managers, but is difficult to explain, if the acquirer is essential for the synergy gain. The results are also consistent with the two behavioral theories that predict no losses to acquirers at the announcements. The market's optimism that induces managers to announce wealth-destroying mergers under the MDH carries over for at least ten days after the announcements. The market's over optimism that led the acquirer to be overvalued under the OH does not immediately disappear at the merger announcements.

The picture changes as the window is extended after the mergers. After one year, the number of positive country means in the M% column has fallen from 18 to 6, after three years it falls to one. The mean percentage *losses* for acquirers become ever larger as the market has more time to evaluate the mergers. After three years, acquirers' shareholders in the United States lost on average 18 percent of their market value compared to non-merging firms of similar size in the same industries. The average loss was 16 percent in the other Anglo-Saxon countries, roughly 15 percent in the four Scandinavian countries, and almost 20 percent in continental Europe. Among the countries for which we have 100 or more mergers, only in Japan did acquirers fair reasonably well. After three years, acquirers' shareholders in Japan experienced a significant mean absolute gain of $725 million.

The numbers in Table 2 imply massive losses to acquiring companies' shareholders following the mergers for most countries. The total losses for the three year windows are $2.5 trillion for the United States, $1.6 trillion for the other Anglo-Saxon countries, $66.6 billion for the Scandinavian countries, and $1.1 trillion for continental Europe. The aggregate loss for the full sample is pulled up by the positive results for Japan, but nevertheless totals $3.6 trillion.

These findings for the longer windows are inconsistent with both neoclassical theories and the hubris hypothesis. They are what one expects, on the other hand, under the managerial discretion and overvaluation hypotheses. However, under the OH the losses to acquirers following the mergers are not *caused* by the mergers, and would have occurred in their absence. The MDH, on the other hand, assumes that the mergers do cause the losses. Given these differences between the MDH and OH, it is important to discriminate between them in determining whether mergers have or have not destroyed wealth. Since both hypotheses make the same predictions for the returns to acquirers at the merger announcements and over longer windows, the results in Table 2 do not allow us to discriminate between them. We thus offer some additional tests. Although the results in Table 2 are inconsistent with the two neoclassical hypotheses, we assume that some mergers fit these hypotheses also, and thus draw out the implications for each and test them for sub-samples for which they seem most appropriate.

IV. Testing Specific Hypotheses about Mergers

The hypotheses about mergers yield different predictions not only for the patterns of abnormal returns to the acquirers, but also with respect to the relationship between the gains to the acquirers and targets. In this section we draw out these additional implications, and use them to test the hypotheses further. Since these tests require measures of the gains to both the acquirers and targets, and the latter can be calculated for only a small fraction of our sample, we combine the data into three country groups – the United States by itself, the remaining Anglo-Saxon countries (Australia, Canada, Ireland, New Zealand and the United Kingdom), and the Scandinavian and continental European countries. Our sample for Japan is very small. Since it falls into neither of the other two country categories, we report no additional results for Japan.

A. The Synergy Hypothesis (SH)

The SH assumes the existence of a synergy specific to the two merging firms as, say, an increase in their market power. Letting G be the gain to the acquiring firm's shareholders and P the premium (gain to target's shareholders), $S = G + P > 0$. When negotiating the premium to the target, managers of the two firms must try to predict S and determine how to divide it. An obvious division would be equal shares for the two companies, since each is necessary for the synergy to arise. This would imply that the coefficient on P in a regression of G on P would be one, where G and P are both measured in absolute dollars. Differences in bargaining strengths between the two companies would result in an unequal division, but we assume that neither firm's bargaining strength is so weak that it comes up empty handed. Thus, we predict a positive coefficient on P in a regression of G on P under the synergy hypothesis.

$$G = bP + \mu \qquad (2)$$

where μ is the error that the managers make in predicting S. It is reasonable to assume that this error will be larger in dollars for a big target company than for a small one. If the errors are unbiased, this would still imply an expected value of zero for μ. In testing the different hypotheses, however, we shall divide the sample according to whether there are positive or negative gains to acquirers. With such a split, it is possible that the errors in predicting S are systematic in one or both samples. To test for this we rewrite μ as $\mu = aM_T + \mu'$, where μ' is now assumed to have zero mean. Thus, our basic model for testing the SH is

$$G = aM_T + bP + \mu' \tag{3}$$

The SH implies $b > 0$, and a tests for systematic errors by the managers in predicting S.

B. The Market-for-Corporate-Control Hypothesis (MCCH)

Under the MCCH all of the wealth created by a merger comes from replacing the target's managers. Assuming that many companies could achieve these gains by taking over the target, the particular company that acquires it has little bargaining power and all of the gains from the merger are assumed to go to the target. $G = 0$, subject to a random error. Eq. 3 is used to test the MCCH with the prediction that $b = 0$, and a again tests for systematic errors in predicting S.

C. Managerial Discretion Hypothesis (MDH)

Under the MDH managers are assumed to maximize growth and undertake mergers even when they generate no synergies. Although the theory does not postulate that managers *avoid* mergers that create synergies, we shall interpret it in this strong form. In the absence of synergies each dollar paid in premium for a target's shares becomes a dollar of wealth loss to the acquirer's shareholders. We test the MDH using eq. 3 with the prediction $b = -1$. We include the size of the target in the equation as before, but are now testing whether there are any systematic transaction costs from mergers that increase the losses to acquirers beyond the premiums paid.

D. The Overvaluation Hypothesis (OH)

The OH assumes that an acquiring company's shares are overvalued. Let O be the amount by which an acquirer's shares are overvalued, then the OH predicts that the acquirer's market value following an acquisition falls by O *less* the value of the company acquired, assuming that it pays no premium for the correctly priced target, $G = M_T - O$. Since mergers are not assumed to generate synergies, each dollar paid in premium for the target constitutes a dollar loss to the acquirer as under the MDH. We thus test the OH with the following regression

$$G = aM_T + bP + cO + \mu' \tag{4}$$

with the predictions $a = 1$, $b = -1$ and $c = -1$. Without the merger the market value of the acquirer would have fallen by the full amount of its overvaluation. The acquirer's shareholders gain from the merger by trading their overvalued shares for the target's assets, but lose by the amount of premium paid to purchase these assets.

To estimate (4) we need a measure of an acquirer's overvaluation. This presents a conceptual problem. If we can calculate the extent to which a company is overvalued so too can the capital market, and the overvaluation should disappear. The OH rests on the assumption that the capital market is not efficient, however, and thus can and does incorrectly value companies at some points in time. We attempt to measure these errors in valuation. Our measure of overvaluation is similar to other approaches,[11] but is easier to conceptualize and interpret.

The market value of a firm i can be written as the present value of its profit stream from now to infinity, where π_{it} is i's profits in period t, and k_i is its cost of capital.

$$V_{i0} = \sum_{t=0}^{\infty} \frac{\pi_{it}}{(1+k_i)^t} \tag{5}$$

Assuming an average rate of growth of g_i from now to infinity, (5) becomes

$$V_{i0} = \sum_{t=0}^{\infty} \frac{\pi_{io}(1+g_i)^t}{(1+k_i)^t} = \frac{\pi_{io}}{k_i - g_i} \tag{6}$$

if $k_i > g_i$. We assume that all firms in an industry have the same costs of capital and expected growth rates, and estimate $1/(k_i - g_i)$ for a typical firm by regressing the market values of all firms in the industry on their profits for a period of time when, based on the aggregate price/earnings ratio for the S&P index, shares in aggregate do not appear to be overpriced. Call this estimate of $1/(k_i - g_i)$, α[12]. Using this α we predict firm *i*'s market value in year *t* as

$$\widehat{V_{it}} = \hat{\alpha}\pi_{it} \tag{7}$$

We then create a measure of a firm's overvaluation in any year, O_{it}, as

$$O_{it} = V_{it} - \widehat{V_{it}} \tag{8}$$

It is, of course, possible that our measure of overvaluation for a given firm does not measure the market's *error* in valuing it, but rather that the market correctly values the firm higher than other companies in its industry because, say, it is better managed. (The same is true of other measures of overvaluation that are based on market-to-book-value ratios.) Thus, to determine whether differences in O_{it} across firms at a particular *t* measure market prediction errors or correct estimates of differences in future performance one needs to examine the later performance of the firms. When a high O_{it} correctly measures a future superior performance of a firm, because it has a talented management, it is reasonable to expect a *positive* coefficient on *O* in the gains equation. Mergers by well-managed firms lead to greater gains for the acquirers' shareholders. As we shall see, some of our results support this interpretation of the *O* variable.

E. Hubris Hypothesis

If we interpret the HH as applying to mergers that produce no synergies, then each dollar of premium is an overbid, and $b = -1$. Alternatively, one can assume that the HH applies in combination with either the SH or the MCCH. In both cases overbidding would increase the premium paid and reduce the acquirer's gain. In the case of the SH, this might still leave the prediction that $b > 0$, but the combination of the MCCH and HH implies that $b < 0$.[13]

F. Results of the Tests

The synergy hypothesis assumes that mergers create wealth and that the two firms share this increase in wealth. It is obviously falsified when the acquiring companies' shareholders suffer losses. Similarly, the MDH and OH are falsified if the acquirers experience positive returns over long, post-merger windows. Since some mergers fall into each category, no single hypothesis can be consistent with all observations. We thus report separate estimates for mergers with positive gains to acquirers and with negative gains. We report only the results for equation (4), since the other hypotheses are nested within this equation.

Table 3 presents the return averages for the firms used to estimate (4). A comparison of Tables 2 and 3 reveals that these returns are somewhat smaller than in Table 2 for most countries, and particularly so for continental Europe.[14] The mean short window return on all 1478 acquisitions is an insignificant 0.1%. Eleven of the 18 country mean percentage abnormal returns are positive, two of them being significant. As in Table 2, after one year, the number of positive country means in the M% column falls, now from 11 to one, but rises again to 4 after three years. As for the larger sample, the mean percentage *losses* for acquirers become even larger as the market has more time to evaluate the mergers.

Table 4a presents the estimates of eq. 4 for the United States. The four upper regressions are for mergers in which the acquirers' shares had positive abnormal returns for the respective windows, the four lower equations are for negative abnormal returns. In 46 percent of the sample (463/1001), the acquirers experienced positive abnormal returns for the shortest window. This percentage falls as the window's length increases reaching 38 percent (349/929) for the longest window.

Turning first to the top of Table 4a, we see that for the shortest window only the overvaluation variable has a positive and significant coefficient suggesting that *O* is capturing the market's positive assessment of the acquirer's management at the time a merger producing positive gains to the acquirer is announced. The negative but insignificant coefficient on *P* is consistent with the MCCH, but not the SH.

The coefficients on *O* increase in magnitude and remain highly significant for the longer windows. Thus, for mergers with positive abnormal returns to acquirers, *O* seems to measure the market's accurate estimate of the abilities of the acquirers' managers. The more talented the market perceives a management to be prior to an acquisition, as measured by *O*, the greater are the gains to its company's shareholders from the acquisition.

Only one of the coefficients on *P* is positive and significant in the three longer-window equations, so that the results for the first four equations in Table 4 offer only weak support for the SH. They do seem to be consistent with the MCCH, however. For three of the four windows, the gains to the acquirers are unrelated to the gains to the targets suggesting that bidding for the target eliminates these gains. But mergers undertaken by managers, whom the market has *correctly* identified as talented, produce positive returns to their shareholders even over long windows. All of the coefficients on M_T are negative, three significantly so, suggesting that managers of successful mergers nevertheless systematically overestimate the synergies from the mergers.

Turning next to the bottom half of Table 4a we see that the coefficient on *O* again is highly significant, but now consistently carries a negative sign. The overvaluation hypothesis predicts a coefficient of negative one on *O*, so that this result is only partially consistent with the hypothesis. Alternatively, one can argue that after two or three years, the market has corrected only around 35 or 45 percent of the overvaluation that we measured at the time of the mergers. The overvaluation hypothesis also predicts coefficients of positive one on M_T and negative one on *P*. Two of the coefficients on M_T are *negative* and significant, however, and all are significantly less than one. Thus, the acquisitions that overvalued US companies undertook do not seem to have protected them from subsequent declines in their shares prices as the market corrected its errors. This prediction of the OH is not supported.

Only one coefficient on *P* is negative and significant, and it is significantly greater than minus one. One coefficient on *P* is even *positive* and significant. Thus, these predictions of the MDH, OH and HH find little support in the US data.

The results for the four bottom equations in Table 4a paint a somewhat mixed picture. For the two-year window, they imply that the losses to companies with negative abnormal returns can be attributed to three factors – the transaction costs of integrating the two companies, the premiums paid for the targets, and the acquirers' overvaluation at the time of the acquisition. The losses for the three- year window are due to the transaction costs of integrating the companies, and the acquirers' overvaluation. In contrast, for the one-year window the results suggest that the acquisitions produced positive gains to the acquirers, but that these were totally wiped out by the reevaluation of the acquirers' shares by the market.

By using the mean values reported in Table 4b, we get a feel for the orders of magnitude implied by the estimates in the bottom half of Table 4a. Assume that an acquirer with a mean market value ($7,823 million) acquired a company with the mean market value of a target ($781 million), that it paid the mean premium ($299 million), and that the acquirer was at the time of the acquisition overvalued by the mean value ($4,369 million). Then the results for the 750 trading day window imply an expected loss to the acquirers' shareholders of $560.6 million due to the costs of integrating the two companies, and $2,001 million due to the acquirer's being overvalued – a combined loss of $2,561.6 million, which amounts to 33 percent of the acquirer's market value when it undertook the merger with about a fifth of this loss due to the merger.

In closing our discussion of the results for the United States, we note that the explanatory power of the model is quite high, particularly given the nature of the dependent variable.[15] If the capital market were efficient, then it should not be possible to predict the returns on different companies' shares. In all eight equations, however, the three variables in our model explain 50 percent or more of the variation in returns on acquirers' shares.

Table 5a presents the results for the United Kingdom and the other Anglo-Saxon countries. As was true for the United States, the fraction of mergers with positive returns to acquirers steadily declines from 46 to 36 percent as the window length increases. Starting with the results for the positive return samples we now see that there is considerable support for the SH for the three long windows. The coefficient on P is positive and significant in all three equations, and greater than one in two. Thus, for mergers, which produce positive gains to acquirers in Anglo-Saxon countries, their gains are proportional to those of the targets and actually exceed those of the targets in some of our estimates.

All four coefficients on M_T are positive and statistically significant implying that, for mergers benefiting acquirers, managers systematically underestimated the size of the synergy gains at the time of the mergers. In contrast to the US results, the relationship between O and G is much weaker with two of the coefficients on O being negative implying that it measures overvaluation even for mergers that benefit acquirers. Taken together the results at the top of Table 5a imply that successful mergers in Anglo-Saxon countries come about due to synergies between the merging companies and not because of the talents of the acquirers' managers or the deficiencies of the targets' managers.

In the bottom half of Table 5a, the coefficient on O is negative and significant in all four regressions lending support to the OH. However, the coefficients on M_T are also negative and significant in all three equations with longer windows, contradicting the OH. The coefficient on P is negative and significant in the regression for the short window, but is either statistically insignificant or *positive* and significant in the three long-window equations. These latter results are inconsistent with the MDH, OH and HH. Thus, the results for the Anglo-Saxon countries imply that, for mergers where there are losses to the acquirers' shareholders, these losses are a result of the overvaluation of the acquirers at the time of the acquisition, and costs of integrating the two companies that are proportional to the sizes of the targets. We note again that the R^2s are all reasonably high.

Some 55 percent of mergers in continental Europe earn positive returns over the short 21 day window around their announcements (Table 6a). This percentage again steadily falls as the market has more time to evaluate the mergers reaching 35 percent after three years. In the positive returns samples, all 12 coefficients on M_T, P and O are positive, and 11 of these are statistically significant. The positive coefficients on P are consistent with the SH, and those on M_T imply a systematic undervaluation of the synergies from the mergers at the time that they take place. The positive coefficients on O suggest that this variable measures the abilities of the acquirers' managers as was true for the US sample. Taken together, the results for continental Europe imply that mergers that benefit acquirers over long windows generate synergies that are shared between the acquirers and the targets, that the sizes of the synergies were systematically underestimated at the time of the mergers, and that the market correctly perceived the acquirers to have talented managers at the time of the mergers.

In the negative returns samples, eleven of the twelve coefficients are negative with nine being significant. The lone positive coefficient is for the overvaluation variable in the shortest window. For both the two- and three-year windows, the coefficients on the premium are significant and slightly larger than minus one. Each dollar paid as a premium costs the acquirers' shareholders a bit more than a dollar over these longer windows as predicted by both the MDH and OH. The coefficient on M_T is negative and statistically significant for the three longest windows, however, which again in contradicts the OH. Taken together, the results in the bottom of Table 6a are quite consistent with the MDH and to some extent with the HH.

The results for the 750 day window in the bottom half of Table 6b, imply a loss of \$6,725 million to an acquirer from acquiring a company with the mean market value of a target (\$5,548 million). The acquirer suffers an additional loss of \$11 million if it paid the mean premium ($10 million), and its shareholders lose an additional $1,686 million if it had the mean level of overvaluation at the time of the acquisition ($5,139 million). The predicted total loss to the acquirer after 750 days would then be $8421 million, a loss equal to 71 percent of the mean acquirer's size. Because the average premium paid in Europe is so small, very little of the loss to an acquirer can be attributed to it. *Eighty* percent of the loss to an acquirer is related to the size of the target and the *negative* synergies from integrating it. We note again the high R^2s reported in Table 6a.

One of the goals of this article is to test whether corporate governance differences between the Anglo-Saxon and civil-law countries lead to differences in returns from mergers that are similar to the differences observed on other forms of investment. This is a little difficult to determine directly from Tables 2 and 3, because as we have seen from the results reported in Tables 4a, 5a and 6a, part of the losses to acquirers over longer post-merger windows appear to be due to their having been overvalued at the time of the acquisitions, and not to the acquisitions themselves. A rough idea of the losses due to the mergers can be obtained by using the coefficients on the overvaluation variables and the figures in Tables 4b, 5b and 6b. From Table 4b we see that, for the subsample with negative gains, the average overvaluation of an acquirer was $4,369.38 million. Multiplying this figure by the coefficient on O in the equation for the 750 day window, -0.458, gives us an estimate of the loss to the acquirers that was due to overvaluation and not the mergers, $2,001.18 million. Subtracting this figure from average loss to an acquirer, $3962.32 million, gives us an estimate of the average loss to acquirers due solely to the mergers of $1961.14 million for the US sample. Similar calculations for the Anglo-Saxon and continental European samples yielded average losses of $512 and $3228 million. Thus, for those mergers that led to losses for the acquiring companies, by far the biggest losses occurred for mergers in continental Europe, after adjusting for the fractions of post-merger losses that are likely to have been due to overvaluation.[16] This finding implies that corporate governance institutions in continental Europe due a worse job protecting shareholders from managers making wealth destroying mergers than in Anglo-Saxon countries.

From the point of view of social welfare, of course, the key question is not whether acquirers suffered losses from the mergers, but whether there were net gains or losses to both acquirers and targets. We again make these calculations for only the longest windows, since these give the market the most time to correct any overvaluation errors made at the time of the mergers, and to evaluate their effects. From Table 4b we see that the average gain to an acquirer for the subsample with positive gains was \$4387.84 million. The average gain to a target was \$382.08 million giving an average total gain from a merger in this subsample of \$4769.92 million. Multiplying this figure by 349 gives us the total gain from the mergers in the positive G subsample, \$1664.7 billion. For the companies in the $G < 0$ subsample, we have an average loss to the acquirers of \$3962.32, and an average gain to the targets of \$299.2 million. To obtain the net loss due to the mergers, we adjust this sum by adding 0.458 times the average overvaluation of an acquirer, \$4369.38 million. Thus, the average net gain that we attribute to a merger in the $G < 0$ subsample is -\$3962.32 + \$299.2 + (.458)(4369.38) = -\$1661.24 million. Multiplying this figure by the number of mergers in the second subsample, 580, we obtain the total loss from this subsample, -\$963521.5 million. Adding this to the total gain from the first subsample gives a total gain from all 929 mergers in the US sample of \$701 billion, which amounts to an average gain per merger of \$754.6 million, just over eight percent of the acquirer's pre-merger market value. Similar calculations for the Anglo-Saxon and continental Europe samples yield an average gain of \$581.9 million (16 percent of the acquirer's pre-merger market value) for a merger in an Anglo-Saxon country, and an average *loss* of \$382.56 million (3.3 percent of the acquirer's pre-merger market value) in continental Europe. The percentage loss per merger in the continental European countries appears very small, because the acquiring companies in these countries were much larger than in both the United States and the other Anglo-Saxon countries.

These results indicate that differences in corporate governance institutions across countries are also related to the overall performance of mergers. Once we adjust for the overvaluation of some acquiring firms at the time of the acquisitions, we find that the average merger in the Anglo-Saxon countries created wealth, while the average merger in continental Europe destroyed wealth.

V. Discussion

Much of the literature on mergers has proceeded as if there was a single hypothesis or set of assumptions that explains all mergers. In this paper, in contrast, we have assumed that several hypotheses may be at work, and in particular that some mergers fit the neoclassical theories and some the behavioral. Since the neoclassical theories assume that managers of an acquirer are maximizing their shareholders' wealth, we have tested these theories with the samples of mergers for which the acquirers' shareholders shared some of the wealth created by the mergers. In all three country samples we have found support for the hypothesis that mergers create synergies that are shared by both merger partners, once we restricted our attention to the samples of mergers with positive gains to acquirers. This result would have been obscured, if we had only looked at the full samples of mergers for each country group.

The behavioral hypotheses predict losses for acquirers over long windows following mergers, and thus we have tested them for the samples in which the gains to the acquirers are negative. Some support for them was found in all three country-samples with the strongest support for the continental European countries. All three coefficients on the premium variable were negative and significant in the long window regressions for continental Europe, with the estimates for the longest two windows being insignificantly different from -1.0 as the OH and MDH predict.

Part of the losses to acquirers over the longer windows could be attributed to their being overvalued at the time of the mergers as the OH predicts. A second prediction of the OH – that the overvalued acquirers' shareholders are better off because of the mergers, i.e., the coefficient on $M_t = 1.0$ – received scant support, however. M_t's coefficient was *negative* and significant in eight of the nine long-window regressions, with the lone exception being the one-year window for the United States, where it was still substantially less than one.

Many event studies that have tested for the effects of mergers have assumed an efficient capital market, and thus have only measured abnormal returns for very short windows around merger announcements. Implicitly, these studies have assumed away the behavioral theories that claim that the capital market is not efficient. The evidence that we present in favor of the behavioral theories implies that limiting one's tests of different merger theories to short windows gives a misleading picture of the causes and effects of mergers.

We have also seen that the picture one gets of the returns from mergers changes dramatically as one extends the window of observation following the mergers. While acquirers appear to experience modest gains over very short windows, they experience large losses over long windows following mergers almost uniformly across all countries.

We have also seen, however, that all of these post-merger negative returns may not be *caused* by the mergers, but rather to some extent are a result of the companies' being overvalued at the time of the mergers. This overvaluation is posited as a cause of mergers under the OH, and also is consistent with both the managerial discretion and hubris hypotheses. Under the MDH managers are unlikely to undertake a merger if it leads to an immediate large drop in their share price. If its shares are overvalued, managers pursuing growth may be more willing to undertake a wealth-destroying merger, because they expect the market's over optimism about their firm (their managerial talents) to continue when they announce a merger. The managers of a company with overvalued shares are also more likely to suffer from hubris.

Thus, to get an accurate measure of the gains (losses) to acquirers that are *caused* by mergers one needs to adjust the post-merger returns to reflect the effect of initial overvaluation. Without this adjustment we would have concluded that the average merger in all three country samples produced a significant negative return to acquirers' shareholders and wealth losses in the United States and continental Europe. After adjusting for the initial overvaluation of some acquirers, on the other hand, it was only mergers in continental Europe that destroyed wealth on average.

The facts that some firms are overvalued, that this may induce them to make acquisitions, and that their post-merger returns will be affected by their being overvalued raises the question of how long of a post-merger window is optimal for measuring the effects of mergers. Here one faces a trade-off. The longer the post-merger window, the more time one gives the market to correct any initial errors in evaluating the acquirer and to assess the merger itself. On the other hand, as the length of the window increases more noise gets into the estimates. We have focused on the results for the three-year windows, but our main conclusions would not change if we concentrated on the two-year windows. In some cases, however, they differ dramatically from what we would conclude if we only looked at the shortest window. Using the three-year window and adjusting for overvaluation of the acquirers, we concluded that the average merger in the United States created \$754.8 million in wealth, the average merger in the other Anglo-Saxon countries created \$581.9 million in wealth, while the average merger in continental Europe *destroyed* \$382.6 million in wealth. If we had made the same calculations for the shortest window, adjusting again for the acquirers' initial overvaluation when the coefficients on O in the short-window equations are negative, we would have estimates of average wealth created by a merger of \$677.7 million for the United States, \$218 million for the other Anglo-Saxon countries, and \$173.9 million for continental Europe. Although the estimate for the United States is not too far off that for the longest window, the estimate for the other Anglo-Saxon countries is two-thirds smaller, and the short-window estimate for continental

Europe gives the erroneous impression that the average merger created \$173.9 million in wealth, when it actually *destroyed* \$382.6 million in wealth assuming that the three-year window gives a more accurate estimate.

Relying only on the estimates for the shortest window would also have obscured the fact that corporate governance institutions in the United States and the other Anglo-Saxon countries also lead to better investment performance than in continental Europe, when one confines one's attention to mergers.

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Table 1. Summary Statistics

	Acquirer Market Value				Target Market Value				Deal Value		
	N	Mean	Median	S.D.	N	Mean	Median	S.D.	Mean	Median	S.D.
USA	4,079	9438.32	1502.84	35397.4	1,244	864.588	147.7	3492.39	1087.03	208.2	3930.46
Canada	328	1906.37	430.51	5442.96	49	431.669	229.5	600.668	594.036	216	845.459
Great Britain	2,126	2875.18	472.027	9494.97	352	787.941	93.35	4630.24	1048.17	140.95	5303.45
Ireland	72	1551.72	466.637	3024.05	12	489.475	250.25	631.304	561.401	369.367	766.573
Australia	325	3595.62	1438.97	7555.53	90	321.11	88.8	481.644	347.287	96	557.968
New Zealand	21	1634.57	540.651	2491.44	5	286.36	76.4	386.055	221.986	100.486	315.512
Japan	500	8296.06	3111.16	17137.6	81	2702.03	169.4	10191.8	643.714	95.8	1996.71
Denmark	58	2093.52	721.513	3277.39	5	104.76	101.9	87.899	145.515	169	97.818
Finland	109	6327.9	784.259	32194.9	6	1164.43	348.45	2138.49	1484.43	1007.6	1968.23
Norway	94	1731.96	570.605	3740.78	10	429.04	442.95	299.477	603.353	116.7	899.445
Sweden	218	3793.76	2265.63	9010.77	28	647.007	170.1	1075.54	664.351	120.232	1170.84
Austria	84	1351.3	547.606	1961.3	8	102.737	54.95	135.229	150.612	95.075	176.512
Belgium	110	1716.03	1021.24	2221.67	4	1785.23	83.3	3439.47	1760.71	128.545	3333.29
France	250	8522.35	2719.29	19105	25	3943.41	785.8	9049.3	4285.22	882.105	10721.9
Germany	612	12563.7	3179.36	26651.8	36	2846.98	911.3	4870.31	3351.66	770.2	6298.36
Greece	10	4337.51	1839.8	4061.24	1	72.9	72.9		46.99	46.99	
Italy	168	7538.52	2627.82	10141.3	12	2100.88	360.7	3714.43	1832.17	631.136	2999.82
Luxembourg	3	1008.05	870.785	673.389							
Netherlands	273	8266.61	2894.99	12444.8	31	6921.18	350.9	33277.7	1595.67	462	2255.16
Portugal	21	2733.12	1928.39	2940.87	1	263.9	263.9		480.132	480.132	
Spain	141	12138.1	3028.53	18600.6	13	7652.78	2649.8	17286	2786.28	437.7	4429.97
Switzerland	131	9693.74	998.127	19254.5	11	3094.1	1209.6	3935.57	3567.7	1682.9	4299.64
Total	9,733	7191.49	1233.1	25968.9	2,024	1107.56	145	6025.06	1113.88	185.4	4164.68

Table 2. Abnormal Returns to Acquiring Companies' Shareholders

Window		-10 +10			10 +250			10 +500			-10 +750	
	N	M%	M	N	M%	M	N	M%	M	N	M%	M
USA	4,079	0.006	155.8	3,855	-0.021	-365.4	3,604	-0.085	-1380.5	3,388	-0.183	-745.8
Australia	325	0.005	-17.9	288	-0.003	-162.3	261	-0.078	-395.7	231	-0.121	-268.7
Canada	328	0.013	45.5	301	-0.029	25.3	273	-0.143	-55.1	256	-0.274	-293.7
Great Britain	2,126	0.01	3.6	1,822	-0.023	-88.9	1,722	-0.083	-59.3	1,569	-0.151	-14.9
Ireland	72	0.011	70.2	60	-0.026	81.6	55	-0.155	-105.6	46	-0.262	142.1
New Zealand	21	0.012	-31.3	17	0.051	-59.7	13	-0.026	-187.6	13	-0.1	-621.8
Anglo-Saxon	2,872	0.01	7.543	2,488	-0.021	-79.257	2,324	-0.091	-98.38	2,115	-0.164	-76.698
Japan	500	0.002	52.9	428	0.014	90.7	388	0.025	105.8	310	-0.01	725.0
Denmark	58	-0.017	0.3	47	-0.045	-392.0	43	-0.125	-562.4	37	-0.106	-357.7
Finland	109	0.012	123.8	78	0.034	12.0	61	-0.017	188.1	51	-0.157	-296.5
Norway	94	0.009	-17.8	84	-0.041	-18.8	72	-0.084	-39.9	65	-0.14	-216.1
Sweden	218	0.009	-1.0	180	0.007	-233.1	163	0.008	-233.0	134	-0.161	-347.0
Scandinavia	479	0.006	25.282	389	-0.004	-156.857	339	-0.033	-157.987	287	-0.148	-309.773
Austria	84	0.003	12.9	65	-0.061	-126.6	60	-0.055	35.5	50	-0.109	296.6
Belgium	110	0.008	0.3	87	0.014	-19.9	90	-0.105	-219.5	84	-0.24	-367.4
France	250	0.003	128.3	222	-0.014	-713.2	208	-0.072	-1455.1	178	-0.166	-808.4
Germany	612	0.001	84.4	524	-0.061	-345.7	504	-0.156	-815.7	421	-0.241	-494.7
Greece	10	-0.009	-90.5	6	-0.037	224.1	5	-0.099	57.9	4	0.013	246.4
Italy	168	-0.004	-44.9	146	-0.053	-547.2	139	-0.077	-481.7	116	-0.114	-265.6
Luxembourg	3	0.021	27.0	3	-0.134	-88.9	3	-0.519	-495.0	3	-0.456	-518.9
Netherlands	273	0	72.0	233	-0.029	-796.2	214	-0.102	-2009.5	173	-0.142	-1847.9
Portugal	21	-0.006	-83.2	12	0.055	13.2	13	0.008	-81.2	10	-0.144	-1001.4
Spain	141	0.009	59.1	127	-0.032	-786.9	116	-0.037	-780.6	85	-0.103	-77.2
Switzerland	131	0	-78.7	102	-0.122	-1146.6	100	-0.251	-2791.7	86	-0.353	-3887.7
Continental Europe	1,803	0.002	52.561	1,527	-0.045	-543.881	1,452	-0.117	-1102.187	1,210	-0.195	-884.44
Total	9,733	0.006	83.194	8,687	-0.023	-283.021	8,107	-0.085	-840.871	7,310	-0.171	-496.00

Notes: M%: the mean abnormal return to acquirers' shareholders as a percent of the market value of equity, M: the mean absolute return to the acquirers, n: the number of acquirers.

Table 3. Abnormal Returns to Acquiring Companies' Shareholders (for samples used in subsequent tests)

		-10 +10			-10 +250			-10 +500			-10 +750	
	N	M%	M	N	M%	M	N	M%	M	N	M%	M
USA	1,001	-0.004	87.65	1,015	-0.051	-391.19	1,000	-0.092	-986.42	929	-0.194	-825.35
Australia	41	0.023	118.64	39	-0.012	-797.17	41	-0.114	-1889.84	35	-0.195	-692.82
Canada	31	-0.017	-0.91	30	-0.167	-288.27	26	-0.435	-854.71	26	-0.522	-1092.18
Great Britain	268	0.000	-17.36	272	-0.047	-145.35	275	-0.079	-115.24	253	-0.132	-45.62
Ireland	9	0.042	214.25	9	-0.063	725.44	9	-0.097	-507.64	7	0.15	1742.46
New Zealand	2	-0.032	-157.56	2	-0.127	-772.76	1	-0.403	-2783.56	1	-0.453	-3126.60
Anglo Saxon	351	0.002	5.12	352	-0.054	-211.05	352	-0.111	-394.17	322	-0.165	-171.17
Austria	3	0.041	36.80	3	-0.038	18.49	3	-0.052	74.80	2	0.052	393.37
Belgium	2	0.124	90.94	2	-0.258	-208.03	2	-0.472	-742.76	1	-0.841	-1529.79
Denmark	5	-0.015	27.49	4	-0.196	-363.69	5	-0.032	-372.89	4	-0.596	-1113.23
Finland	3	0.014	59.54	1	-0.416	-1397.40	1	-0.334	-359.31	2	-0.543	-1323.46
France	19	-0.012	54.69	20	-0.076	-382.17	19	-0.031	-2735.81	17	0.08	-788.69
Germany	24	-0.012	-130.63	26	-0.008	636.71	28	0.032	3360.83	17	0.038	1765.95
Italy	7	0.068	246.97	9	-0.13	-936.57	9	-0.186	-1151.41	7	-0.164	-1539.89
Netherlands	23	0.041	193.08	22	0.046	-976.19	23	-0.116	-3688.90	16	-0.164	-5787.75
Norway	5	-0.074	-97.29	5	-0.139	-213.86	5	-0.071	-237.70	4	-0.388	-869.95
Portugal	1	0.021	42.48									
Spain	10	0.024	-961.66	10	-0.172	-3944.00	10	-0.073	-3821.81	9	0.117	-1994.62
Sweden	17	0.009	-377.58	17	-0.011	-1960.82	18	0.096	-2215.70	12	-0.329	-1050.98
Switzerland	7	-0.009	-68.95	6	-0.331	-3278.80	6	-0.408	-3689.79	5	-0.332	-4483.89
Continental Europe & Scandinavia	126	0.010	-97.46	125	-0.0665	-941.79	130	-0.052	-1204.42	96	-0.126	-1573.70
Total	1,478	-0.001	52.27	1,492	-0.053	-394.82	1,481	-0.093	-864.87	1,347	-0.182	-722.30

Notes: M%: the mean abnormal return to acquirers' shareholders as a percent of the market value of equity, M: the mean absolute return to the acquirers, n: the number of acquirers.

Table 4a Explaining the Gains to Acquirers, USA

The dependent variable in all regressions is the gain to the acquiring firm (G). M_T is the target market value, P is the premium, O is the measure for overvaluation (see eqs. 5-8). Heteroscedasticity consistent t-values are reported under the coefficients in parentheses.

Window	Gain	M_T	P	O	N	$\bar{R}^2$
-10,+10	>0	-0.043	-0.064	0.095	463	0.62
		(1.65)	(1.23)	(27.52)		
-10,+250	>0	-0.158	0.061	0.434	437	0.79
		(2.44)	(0.57)	(40.32)		
-10,+500	>0	-0.234	-0.056	0.334	413	0.57
		(3.59)	(0.49)	(22.97)		
-10,+750	>0	-0.579	1.754	0.415	349	0.52
		(3.26)	(2.78)	(17.16)		
-10,+10	<0	0.032	0.012	-0.117	538	0.76
		(1.69)	(0.43)	(40.35)		
-10,+250	<0	0.271	0.314	-0.429	578	0.81
		(3.81)	(2.37)	(48.24)		
-10,+500	<0	-0.267	-0.447	-0.345	587	0.72
		(2.70)	(2.03)	(37.29)		
-10,+750	<0	-0.718	0.128	-0.458	580	0.66
		(5.18)	(0.49)	(31.65)		

Table 4b: Means of Variables, USA (For samples used in the -10, +750 window)

Variable	Full Sample	G>0	G<0
Market Value (Acquirer)	9169.30	11407.08	7822.77
G	-825.35	4387.94	-3962.32
P	330.77	382.08	299.90
M_T	855.98	980.87	780.83
O	5227.19	6652.79	4369.38

Table 5a Explaining the Gains to Acquirers, Non-US Anglo-Saxon Countries

The dependent variable in all regressions is the gain to the acquiring firm (G). M_T is the target market value, P is the premium, O is the measure for overvaluation (see eqs. 5-8). Heteroscedasticity consistent t-values are reported under the coefficients in parentheses.

Window	Gain	M_T	P	O	N	$\bar{R}^2$
-10,+10	>0	0.071	-0.063	0.072	163	0.70
		(4.48)	(1.10)	(12.07)		
-10,+250	>0	0.303	1.729	-0.146	137	0.81
		(15.30)	(10.33)	(9.81)		
-10,+500	>0	0.185	2.312	-0.013	132	0.83
		(7.03)	(10.15)	(0.70)		
-10,+750	>0	0.797	0.666	0.1655	119	0.85
		(6.75)	(1.32)	(5.56)		
-10,+10	<0	0.003	-0.149	-0.011	188	0.42
		(0.70)	(4.41)	(3.40)		
-10,+250	<0	-0.414	-0.185	-0.304	215	0.74
		(3.39)	(1.22)	(18.52)		
-10,+500	<0	-0.753	0.586	-0.597	220	0.77
		(4.47)	(2.55)	(22.12)		
-10,+750	<0	-0.481	0.334	-0.726	203	0.56
		(2.20)	(1.06)	(13.46)		

Table 5b Means of Variables, Non-US Anglo-Saxon Countries (For samples used in the -10, +750 window)

Variable	Full Sample	G>0	G<0
Market Value (Acquirer)	3596.79	4856.34	2858.44
G	-171.16	1870.06	-1367.74
P	213.39	324.64	148.18
M_T	523.00	807.63	356.15
O	1525.85	2117.34	1179.11

Table 6a Explaining the Gains to Acquirers, Europe

The dependent variable in all regressions is the gain to the acquiring firm (G). M_T is the target market value, P is the premium, O is the measure for overvaluation (see eqs. 5-8). Heteroscedasticity consistent t-values are reported under the coefficients in parentheses.

Window	Gain	M_T	P	O	n	$\overline{R}^2$
-10,+10	>0	0.058	0.050	0.047	69	0.32
		(4.05)	(2.68)	(4.65)		
-10,+250	>0	0.719	1.138	0.186	52	0.56
		(5.01)	(3.48)	(4.74)		
-10,+500	>0	0.348	0.796	0.348	50	0.64
		(3.31)	(2.13)	(5.72)		
-10,+750	>0	0.469	0.625	0.565	34	0.72
		(3.72)	(1.37)	(5.85)		
-10,+10	<0	-0.017	-0.010	0.095	57	0.67
		(0.47)	(0.27)	(9.29)		
-10,+250	<0	-0.184	-0.162	-0.294	73	0.72
		(3.53)	(2.92)	(12.49)		
-10,+500	<0	-1.125	-1.079	-0.353	80	0.82
		(6.91)	(6.44)	(13.87)		
-10,+750	<0	-1.212	-1.117	-0.328	62	0.69
		(5.21)	(4.70)	(6.52)		

Table 6b Means of Variables, Europe (For samples used in the -10, +750 window)

Variable	Full Sample	G>0	G<0
Market Value (Acquirer)	11394.52	10680.25	11786.21
G	-1573.70	4516.55	-4913.52
P	102.17	270.70	10.07
M_T	5062.19	4175.56	5548.41
O	4611.28	3647.64	5139.73

Notes.

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[1] For evidence on dividends, see La Porta *et al.* (2000), Faccio, Lang and Young (2001); for evidence on returns on investment, see Gugler, Mueller and Yurtoglu (2003, 2004).

[2] For evidence linking the quality of a country's corporate governance and legal institutions to the size of financial markets, see La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997), Modigliani and Perotti (1997), Demirguç-Kunt and Maksimovic (1998), and Beck, Demirguç-Kunt, and Levine (2003, 2005). For evidence linking the the size of financial markets to economic growth, see Levine and Zervos (1998), and Beck, Levine and Loayza (2000).

[3] See, Marris (1964, Ch. 2), and Mueller (2003b, Ch. 5).

[4] The evidence dates back 30 years and is overwhelming. See, Mandelker (1974), Langetieg (1978), Firth (1980), Asquith (1983), Malatesta (1983), Varaiya and Ferris (1987), Bradley, Desai and Kim (1988), Magenheim and Mueller (1988), Franks and Harris (1989), Lang, Stultz and Walking (1989),Bhagat, Shleifer and Vishny (1990), Franks, Harris and Titman (1991), Agrawal, Jaffe and Mandelker (1992),Kang (1993), Berkovitch and Narayanan (1993), Houston and Ryngaert (1994), Leeth and Borg (1994), Smith and Kim (1994), Doukas (1995), Hubbard and Palia (1995), Gregory (1997), Higson and Elliott (1998), Maquieira, Megginson and Nail (1998), Bhagat, Dong, Hirshleifer and Noah (2005), Becher (2000), Eckbo and Thorborn (2000), Andrade, Mitchell and Stafford (2001), and Conn, Cosh, Guest and Hughes (2005), Moeller, Schlingemann, and Stulz (2005).

[5] For empirical evidence in support of the overvaluation hypothesis, see Rhodes-Kropf, Robinson and Viswanathan (2005), Dong et al. (forthcoming) and Ang and Cheng (2003).

[6] See, Bradley, Desai and Kim (1988) and Weston et al. (2001, p. 221).

[7].For evidence that acquiring companies generally outperform the stock market *prior* to their making an acquisition, see Mueller (2003a; 2003b, Ch. 8). For a discussion linking high stock market prices and mergers that fit the MDH, see Gugler, Mueller and Yurtoglu (2005). For general discussions of the psychology of the market during booms, see Galbraith (1961), Kindleberger (1996), and Shiller (2000).

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[8] Note that we do not have data on the market value of targets in all acquisitions. Since smaller mergers and targets tend to be unlisted companies, our sample is biased against small targets.

[9] For some countries (and for some time periods) it was not possible to construct a meaningful control portfolio using this criterion. In such cases, we have used the return on the (size and industry based) control portfolio for the respective region, i.e., USA, non-US Anglo-Saxon and Europe.

[10] We also compute (but do not report) abnormal returns over several other short-term windows such as from *t-3* to *t+3*, from *t-5* to *t+5*, and from *t-1* to *t+1*. While the magnitude of these additional and shorter window abnormal returns are smaller than those we report, the general picture remains very similar.

[11] See for example Dong *et al.* (2006).

[12] We make four separate estimates of αs for USA, Great Britain and Ireland, for Canada, New Zealand and Australia, and for the Scandinavian and continental European countries. For the USA αs are estimated for the years 1981-1994 when the S&P P/E was near its long run average of 15. The 48 estimates of α were quite reasonable ranging between 3.36 and 17.45 with a mean of 9.40. αs are smaller for other countries.

[13].For further discussion of how one combines the HH with the other hypotheses, see Mueller and Sirower (2003, pp. 376-77).

[14] Note that these acquirers are much larger than those contained in table 2.

[15]. R^2s above 0.1 are seldom recorded in studies that try to explain the gains to acquirers. See, for example, You, Caves, Smith, and Henry (1986) and Travlos (1987), and Mueller and Sirower (2003).

[16] We also made similar adjustments for each merger. These adjustments shifted some of the mergers from the loss-to-acquirers to the gain-to-acquirers subsamples, but did not change the overall picture of a majority of all mergers in each of the country samples leading to losses to acquirers for the longer windows.